

Notice of Allowability

Application No.

10/733,775

Examiner

Fred A. Casca

Applicant(s)

MURAI, HIDESHI

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to June 21, 2006.
2. ☒ The allowed claim(s) is/are 1,3-6,8-16,18-21,23-29 and 32-35.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed on June 21, 2006, with respect to claims 1, 3-6, 8-16, 18-21, 23-29, 32-35 have been considered and are persuasive. The new limitations to independent claims 1, 9, 16, 24, and 33 have not been found or suggested by prior art. The rejection of claims 1, 3-6, 8-16, 18-21, 23-29, 32-35 has been withdrawn.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. John Lastova on July 18, 2006.

[Begin Audit]

IN THE CLAIMS:

Claims 1, 6, 16, 18, and 21 have been amended as follows:

Claim 1. (Currently Amended) A method for use in a cellular communications system that includes a macro cell encompassing a smaller micro cell, comprising:

determining and establishing an uplink communication cell boundary between the macro cell and the micro cell, and

determining and establishing a downlink communication cell boundary between the macro cell and the micro cell different from the uplink communication cell boundary,

wherein the uplink communication cell boundary is larger than the downlink communication cell boundary, the method further comprising:

determining whether an uplink interference level at the micro cell base station exceeds a threshold, and if so, performing an interference cancellation operation to compensate for the uplink interference level, wherein the determining step includes:

determining whether to compensate for intra-cell uplink interference in the micro cell,
and

detecting one or more parameters regarding one or more mobiles on the macro cell side of the downlink communication cell boundary, and

wherein the performing step includes using those one or more parameters for uplink interference cancellation in the micro cell.

Claim 6. (Currently Amended) The method of claim 1, wherein the communications system is a CDMA system, [the method further comprising:

determining whether an uplink interference level at the micro cell base station exceeds a threshold, and if so, performing an interference cancellation operation to compensate for the plink interference level].

Claim 16. (Currently Amended) Apparatus for use in a cellular communications system that includes a macro cell encompassing a smaller micro cell, comprising:

means for determining and establishing an uplink communication cell boundary between the macro cell and the micro cell, and

means for determining and establishing a downlink communication cell boundary between the macro cell and the micro cell different from the uplink communication cell boundary,

wherein the uplink communication cell boundary is larger than the downlink communication cell boundary, the apparatus further comprising:

means for determining whether an uplink interference level at the micro cell base station exceeds a threshold, and if so, performing an interference cancellation operation at a receiver at the micro cell to compensate for the uplink interference level,

wherein the mean for determining is configured to determine whether to compensate for intra-cell uplink interference in the micro cell; and to detect one or more parameters regarding one or more mobiles on the macro cell side of the downlink communication cell boundary; and

wherein the means for performing is configured to provide the one or more parameters for use in uplink interference cancellation in the micro cell.

Claim 18. (Currently Amended) The apparatus in claim 16 [18], further comprising:

means for reducing a power at which a broadcast signal is transmitted from a base station associated with the micro cell to reduce the downlink communication cell boundary.

Claim 21. (Currently Amended) The apparatus in claim 18, wherein the communications system is a CDMA system, [the apparatus further comprising:

means for determining whether an uplink interference level at the micro cell base station exceeds a threshold, and if so, performing an interference cancellation operation at a receiver at the micro cell to compensate for the uplink interference level].

[End Audit]

Claims 7 and 22 are cancelled.

Allowable Subject Matter

3. Claims 1, 3-6, 8-16, 18-21, 23-29, 32-35 are allowed.

The following is an examiner's statement of reasons for allowance: The arguments presented in page 8 of the appeal brief filed on June 21, 2006 are persuasive.

Any comments necessary by applicant must be submitted no later than the payment of the issue fee, and to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

4. Any response to this Office Action should be mailed to:

U.S Patent and Trademark Office
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or Faxed to:

571-273-8300.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred A. Casca whose telephone number is (571) 272-7918. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid, can be reached at (571) 272-7922.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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